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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,987	03/24/2004	Katsuyoshi Hiraki	1117:70175	4463

7590 10/30/2007  
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Chicago, IL 60606

EXAMINER
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CHOW, YUK

ART UNIT	PAPER NUMBER
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2629

MAIL DATE	DELIVERY MODE
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10/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/807,987	HIRAKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Yuk C. Chow	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US Pub. No.: US2002/0140652) in view of Tashiro et al. (US Patent 6,876,347).

As to claim **1**, Suzuki discloses a liquid crystal display device configured to compare inputted image data (Fig. 10(nFi)) and image data of a preceding frame (Fig. 10((n-1)Fp)) and subject the inputted image data to data correction for improving response speed (Fig. 12) of liquid crystal based on a result of the comparison (see Abstract), comprising a data driver (Fig 1(12)).

However, Suzuki does not teaches at least one of an output corresponding to a maximum tone and an output corresponding to a minimum tone in said data driver is used for only the image data that has undergone the data correction.

Tashiro discloses a liquid crystal display comprising a driving circuit forms a correction voltage to speed up the response wherein a minimum value and maximum value of luminance were used (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the driving technique of Tashiro's into control circuit of Suzuki. Because this will speed up a response speed of each of the LCD elements, by

driving the inputted image signal with correction of a maximum and minimum value of the luminance (see Tashiro Col. 2 line 54-Col. 3 line 11).

As to claim 2, Tashiro discloses a liquid crystal display device according to claim 1, wherein the output corresponding to the maximum tone (Fig. 3(White)) and the output corresponding to the minimum tone (Fig. 3(Black)) are used only for the image data that has undergone the data correction (see Abstract).

As to claim 3, Suzuki discloses a liquid crystal display device according to claim 1, wherein tones that said data driver is capable of outputting (Fig. 15c(9)) from all outputs are displayed by arbitrarily combining all the outputs of said data driver except the output corresponding to the tone used only for the image data that has undergone the data correction [0084].

As to claim 4, Suzuki discloses a liquid crystal display device according to claim 3, further comprising a table (Fig. 4) in which the tones that said data driver is capable of outputting are shown so as to be related to the combinations of the outputs of said data driver except the output corresponding to the tone used only for the image data that has undergone the data correction [0045-0048].

As to claim 5, Suzuki discloses a liquid crystal display device according to claim 3, wherein an error diffusion method (Fig. 14B) is applied to the combinations of the outputs of said data driver except the output corresponding to the tone used only for the image data that has undertone the data correction [0095].

As to claim 6, Suzuki discloses a liquid crystal display device according to claim 1, wherein said data driver is capable of outputting, in addition to outputs corresponding

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to all tones designatable by the image data, at least one of an output corresponding to a higher luminance than a luminance of the maximum tone (Fig. 16A(E1)) and an output corresponding to a lower luminance (Fig. 16A(E2)) than a luminance of the minimum tone [0091-0094].

As to claim 7, Tashiro discloses a liquid crystal display device according to claim 6, wherein as at least one of the output corresponding to the higher luminance than the luminance of the maximum tone (Fig. 3( $V_A(P)/V_B(N)$ )) and the output corresponding to the lower luminance than the luminance of the minimum tone (Fig. 3( $V_c(P)/V_d(N)$ )), a plurality of outputs (Fig. 3( $V_7(P)/V_{10}(N)$ ), ( $V_6(P)/V_{11}(N)$ )) corresponding to luminances different from each other are allowed to be outputted (Col. 5 lines 18-51).

As to claim 8, Suzuki discloses a data driver being capable of outputting, in addition to outputs corresponding to all tones designatable by inputted image data, at least one of an output corresponding to a higher luminance than a luminance of a maximum tone (Fig. 16A(E1)) and an output corresponding to a lower luminance than a luminance of a minimum tone (Fig. 16A(E2) also see [0091-0094]).

As to claim 9, Suzuki teaches a liquid crystal display device configured to compare inputted image data (Fig. 10(nFi)) and image data of a preceding frame (Fig. 10((n-1)Fp) and subject the inputted image data to data correction for improving response speed (Fig. 12) of liquid crystal based on a result of the comparison, comprising a processing part (Fig 1(12)) configured to process the image data to increase a luminance level, wherein in said processing part, processing of the image

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data that has undergone the data correction is prohibited (Fig 4, 5 (diagonal "-" in the tables), also see [0045-0050]).

As to claim **10**, Suzuki disclose a liquid crystal display device configured to compare inputted image data and image data of a preceding frame and subject the inputted image data to data correction for improving response speed of liquid crystal based on a result of the comparison, comprising a backlight that is impulse-driven (Fig.12), wherein a correction amount in the data correction is changed by a unit of at least one horizontal line or more [0080].

As to claim **11**, Suzuki discloses a liquid crystal display device, configured to compare inputted image data and image data of a preceding frame and subject the inputted image data to data correction for improving response speed of liquid crystal based on a result of the comparison, a correction amount in the data correction being changed according to a temperature, comprising a temperature measuring part (Fig. 1(24)), wherein a temperature measured in said temperature measuring part is corrected by a temperature correction amount that varies with time, during a period from a power supply time to a temperature stable time [0096,0097].

Regarding claims **12-14**, limitations within these claims are identical to claims 1-3, except they are the method claims. Therefore, same rejections apply to these claims.

### ***Response to Amendment***

3. The certified English translation of the corresponding Japanese priority application filed on 08/17/2007 is sufficient to overcome Pan et al. (US Patent 7,164,284).

Applicant's amendment by filing translation necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuk C. Chow whose telephone number is 571 270-1544. The examiner can normally be reached on 8-6 M-TH E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571 270-1550. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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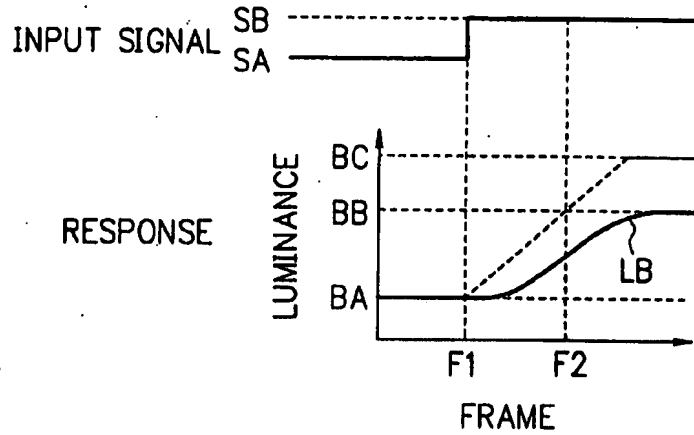
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YC  
10/18/2007

  
AMARE MENGISTU  
SUPERVISORY PATENT EXAMINER

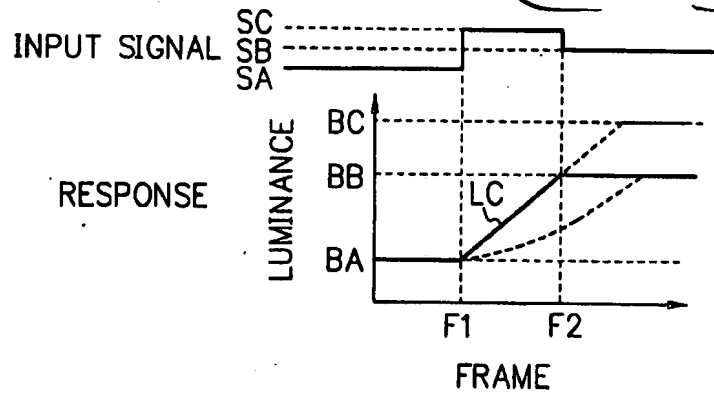


FIG. 7A (PRIOR ART)



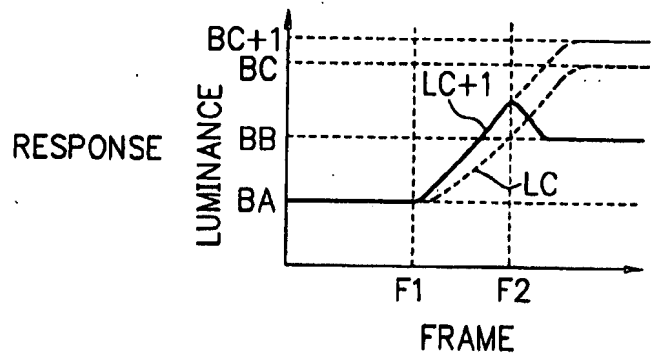
Approved  
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FIG. 7B (PRIOR ART)



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FIG. 8 (PRIOR ART)



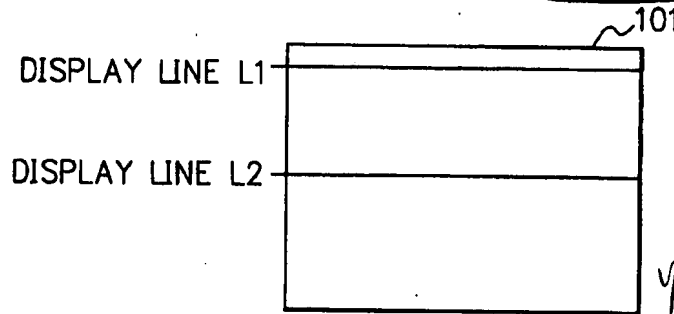
Approved  
 Y.L. 10/26/2006

FIG. 9 (PRIOR ART)

	FIRST FRAME	SECOND FRAME								
TONE(C+1)	<table><tr><td>C+1</td><td>C+1</td></tr><tr><td>C+1</td><td>C+1</td></tr></table>	C+1	C+1	C+1	C+1	<table><tr><td>C+1</td><td>C+1</td></tr><tr><td>C+1</td><td>C+1</td></tr></table>	C+1	C+1	C+1	C+1
C+1	C+1									
C+1	C+1									
C+1	C+1									
C+1	C+1									
TONE(C')	<table><tr><td>C+1</td><td>C</td></tr><tr><td>C</td><td>C+1</td></tr></table>	C+1	C	C	C+1	<table><tr><td>C</td><td>C+1</td></tr><tr><td>C+1</td><td>C</td></tr></table>	C	C+1	C+1	C
C+1	C									
C	C+1									
C	C+1									
C+1	C									
TONE(C)	<table><tr><td>C</td><td>C</td></tr><tr><td>C</td><td>C</td></tr></table>	C	C	C	C	<table><tr><td>C</td><td>C</td></tr><tr><td>C</td><td>C</td></tr></table>	C	C	C	C
C	C									
C	C									
C	C									
C	C									

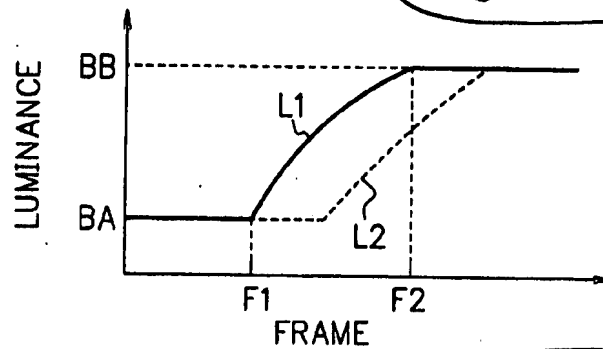
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FIG. 10A (PRIOR ART)



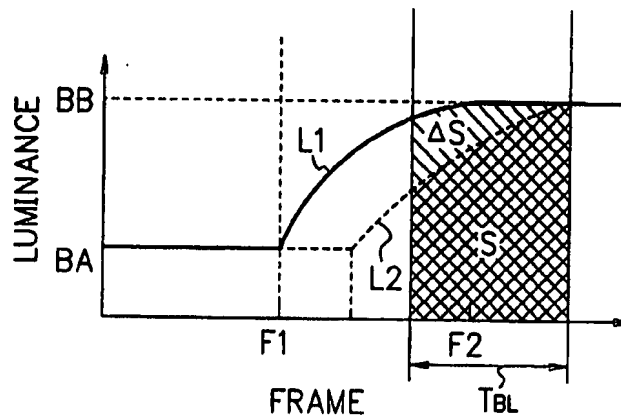
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FIG. 10B (PRIOR ART)



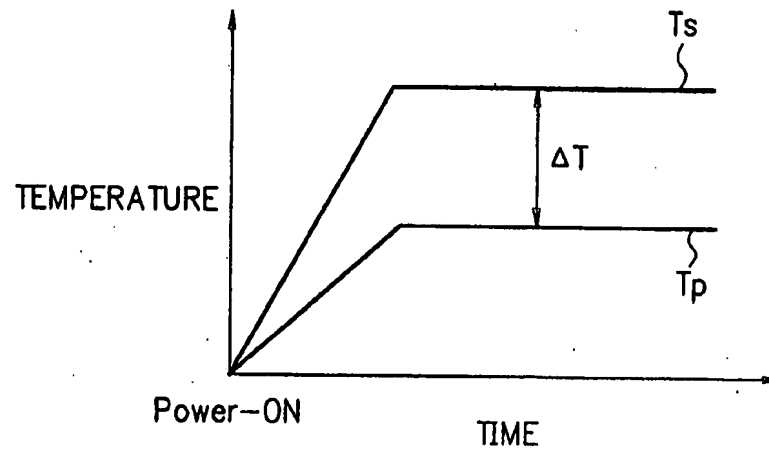
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Y.L. 10/26/2007

FIG. 10C (PRIOR ART)



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FIG. 11 (PRIOR ART)



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